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An Evaluation of the Reliability and Quality of Information in Labiaplasty Videos Shared on YouTube

Youtube'da Paylaşılan Labioplasti Videolarındaki Bilgilerin Güvenilirliğinin ve Kalitesinin Değerlendirilmesi

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ABSTRACT

Aim: The objective of this study was to evaluate the reliability and quality of videos on YouTube about labiaplasty procedures.
Material and Methods: A search was carried out on YouTube using the search terms 'labiaplasty' and 'labia minora reduction'. The first 100 videos for each keyword were evaluated and 42 videos were analyzed. The distribution of video types was examined. The videos were scored by a five-member committee using the global quality scale (GQS) and modified DISCERN (mDISCERN) scales. Videos uploaded by physicians and academicians were classified as professional, and patients, commercial entities, and allied health personnel were classified as non-professional groups.
Results: The mean mDISCERN score of all videos was 2.29±0.65, while the mean GQS score was 2.75±0.67. When professional and non-professional groups were compared, the mDISCERN and GQS scores were significantly higher in the professional group (p=0.017 and p=0.010, respectively). When surgical technique videos and videos providing information about the disease or surgery were compared, there was a significant difference in video power index (VPI), viewing rate, and number of comments (p=0.001, p=0.001, and p=0.003, respectively), while there was no significant difference in terms of mDISCERN and GQS scores. Weak negative correlations were observed between the mDISCERN score and VPI (r_s=-0.326, p=0.037), between the GQS score and viewing rate (r_s=-0.392, p=0.010), and between the GQS score and VPI (r_s=-0.382, p=0.014).
Conclusion: YouTube is not a reliable source of information about labiaplasty. Low-quality videos receive more engagement. Obstetrics and gynecology associations should produce content on YouTube about this subject.
Keywords: Genitalia; female; social media; video recording.

ÖZ

Amaç: Bu çalışmanın amacı YouTube'da yer alan labioplasti prosedürlerine ilişkin videoları güvenilirlik ve kalite açısından değerlendirmektir.
Gereç ve Yöntemler: Youtube'da "labiaplasty" ve "labia minora reduction" arama terimleri ile bir arama yapıldı. Her bir anahtar kelime için ilk 100 video incelendi ve 42 video analiz edildi. Video türlerinin dağılımı incelendi. Videolar beş kişilik bir komite tarafından küresel kalite ölçeği (global quality scale, GQS) ve modifiye DISCERN (mDISCERN) ölçekleri kullanılarak puanlandı. Hekimler ve akademisyenler tarafından yüklenen videolar profesyoneller grubu, hastalar, ticari kuruluşlar ve yardımcı sağlık personelleri tarafından yüklenenler ise non-profesyoneller grubu olacak şekilde sınıflandırıldı.
Bulgular: Tüm videoların mDISCERN puan ortalaması 2,29±0,65, GQS puan ortalaması 2,75±0,67 idi. Profesyonel ve non-profesyonel grupları karşılaştırıldığında mDISCERN ve GQS puanı profesyonel grupta anlamlı olarak daha yüksekti (sırasıyla p=0,017 ve p=0,010). Cerrahi teknik videoları ile hastalık veya cerrahi hakkında bilgi veren videolar karşılaştırıldığında, mDISCERN ve GQS puanları bakımından anlamlı bir farklılık yokken video güç indeksi (video power index, VPI), görüntülenme oranı ve yorum sayıları açısından anlamlı farklılık mevcuttu (sırasıyla p=0,001, p=0,001 ve p=0,003). mDISCERN puanı ile VPI arasında (r_s=-0,326; p=0,037), GQS puanı ile izlenme oranı arasında (r_s=-0,392; p=0,010) ve GQS puanı ile VPI arasında (r_s=-0,382; p=0,014) zayıf negatif korelasyonlar gözlendi.
Sonuç: YouTube labioplasti ile ilgili güvenilir bir bilgi kaynağı değildir. Düşük kaliteli videolar daha fazla etkileşim içindedir. Obstetri ve jinekoloji dernekleri bu konu hakkında Youtube'da içerik üretmelidirler.
Anahtar kelimeler: Üreme organları; kadın; sosyal medya; video kayıt.

INTRODUCTION

Female genital cosmetic surgeries (FGCSs) have become more popular in recent years. FGCSs, especially labiaplasty, seem to have a positive effect on women's self-esteem (1). Labiaplasty is the most common FGCS. For example, the rate of labiaplasty in the United States increased by about 42% between 2017 and 2021 (2).

Because it is generally easy to access, the internet has become a common and frequently preferred platform for searching for health information in recent years. Women thinking about FGCSs use the internet as an important source of information when making decisions (3). In recent years, labiaplasty has been preferred more than vaginoplasty, platelet therapy, and clitoral hood reduction (2).

Previously, a study was conducted in which YouTube videos about FGCSs were evaluated (4). However, we could not find any research evaluating YouTube videos about the most common procedure; labiaplasty. Therefore, the purpose of our study was to evaluate videos about labiaplasty procedures on YouTube in terms of their content, accuracy, reliability, and quality.

MATERIAL AND METHODS

Data Collection

A search was performed on https://www.youtube.com/ on January 10, 2023, with the keywords 'labiaplasty' and 'labia minora reduction'. The browser's search history and all cookies had been deleted, and no personal Google or YouTube account had been logged into before searching.

The videos were listed by relevance, which is the current default option on YouTube. Several studies about search engine user behavior have demonstrated that most users click on a search result on the first page of results, and 90% of search engine users click on a result within the first three pages of results (5). However, currently, YouTube's search engine displays results in the form of an infinite scrolling list, not as pages. Therefore, to conduct the most reliable statistical analysis, the first 100 videos for each keyword were analyzed.

Videos uploaded on YouTube in English that were related to the subject and between 1-10 minutes were included. Since videos under 10 minutes would be more effective, we took the duration of the videos 1 to 10 minutes (6). If the videos were not related to the subject (n=17), not in English (n=9), repetitive (n=45), low image quality (n=6), under 60 seconds, or over 10 minutes (n=49), they were excluded from the study, as were advertisements (n=32). A total of 158 videos were excluded and 42 videos were evaluated in the final analysis.

Video Analysis

For each video, the type of image (real/animated), number of views, number of likes and dislikes, number of comments, time since upload, and duration were recorded. The view ratio (number of views/days), like ratio (likes × 100/[likes + dislikes]), and video power index (VPI; like ratio × view ratio/100) were calculated.

The primary purposes of the videos were categorized into three groups: 1) concerning surgical techniques, 2) providing information about the disease or surgery, and 3) sharing personal experiences. The videos were further classified into five basic groups by the type of uploader: 1) academic or institution, 2) physician, 3) patient, 4) commercial entity, and 5) allied health professional.

A committee of five people was established to analyze the videos. Each participant rated the videos based on the modified DISCERN (mDISCERN) and global quality score (GQS) scales.

DISCERN Scale

The DISCERN scale is a scoring tool used to assess the reliability of health information on treatment options for consumers. In this study, we used the mDISCERN tool, which was created by Charnock et al. (7) and shortened by Singh et al. (8). The scale consists of five questions evaluated on a 5-point Likert scale between 0 and 5. Higher scores represent greater reliability. One point indicates very poor quality, two points for poor quality and limited use, three points for medium quality, four points for good quality, and five points for very good quality.

Global Quality Score (GQS)

The GQS scale was introduced by Bernard et al. (9) to measure the quality of a video's content based on the usefulness of the information offered in the video. This scale consists of five questions that evaluate the quality, flow, and ease of use of information provided in a video on a 5-point Likert scale. Higher scores represent higher quality. One point indicates very poor quality, two points for poor quality and limited use, three points for medium quality, four points for good quality, and five points for very good quality.

Ethical Considerations

Approval from an ethics committee was not required, as this was an observational study performed using data collected from publicly available YouTube videos.

Statistical Analysis

We performed statistical analysis using IBM SPSS Statistics for Windows, v.25.0 (IBM, Armonk, New York, USA). The continuous variables were investigated using visual methods (histograms, probability plots) and analytical methods (Shapiro-Wilk test) to determine whether they were normally distributed. Data were presented as median, interquartile range (IQR), minimum, and maximum for continuous data, and as numbers and percentages for categorical data. The Mann-Whitney U test was used when comparing continuous variables between the two groups because the variables did not fit a normal distribution. The relationships between the median mDISCERN and GQS scores, VPI index, video view rate, and number of comments were investigated using Spearman's correlation test. Two-sided p values <0.05 were considered statistically significant.

RESULTS

Of the videos, 40 (95.2%) were real. Most of the videos were uploaded by physicians (n=36, 85.7%). The most common (n=25, 59.5%) video content was information about the disease or surgery (Table 1). Physicians and academy groups were classified as professionals; patients, commercial entities, and allied health personnel were classified as non-professionals.

The median duration of the videos was 246 seconds, the number of views was 23999, the time since upload was 1240 days, the view ratio was 20.7, the number of likes was 116.5, the number of dislikes was 13.5, the like ratio was 93.8, the VPI was 19.5, and the number of comments was 6.5 (Table 2).

Table 1. Distribution of video types

	n (%)
Image Type	
Real	40 (95.2)
Animation	2 (4.8)
Uploaders	
Academic or institution	2 (4.8)
Physician	36 (85.7)
Patient	2 (4.8)
Commercial entity	1 (2.4)
Allied health professional	1 (2.4)
Video Content	
Surgical technique	15 (35.7)
Information about the disease or surgery	25 (59.5)
Personal experiences	2 (4.8)

According to the mDISCERN median scores, 1 (2.4%) video was good, 15 (35.7%) videos were medium quality, 15 (35.7%) videos were poor quality, and 11 (26.2%) videos were very poor quality. According to the GQS median scores, 5 (11.9%) videos were good, 20 (47.6%) videos were medium quality, 11 (26.2%) videos were poor quality, and 6 (14.3%) videos were very poor quality. There were no videos ranked as very good quality on both scales. The median of all videos' mDISCERN scores was 2.2, while the median GQS score was 2.8. The mean of all videos' mDISCERN scores was 2.29±0.65, while the mean GQS score was 2.75±0.67 (Table 3).

When uploaders as professionals and non-professionals were compared, both the mDISCERN and GQS scores were significantly higher in the professional group (p=0.017 and p=0.010, respectively). For professionals, the median mDISCERN score was 2.4 (range, 1.4-3.8), while the median GQS score was 2.9 (range, 1.4-4.2). There was no significant difference in view ratio, VPI, and number of comments between professional and non-professional uploaders (Table 4). When surgical technique videos were compared with videos that provide information on the disease or surgery, there was no significant difference in mDISCERN and GQS scores, but there was a significant difference in view ratio, VPI, and number of comments in favor of surgical technique videos (p=0.001, p=0.001, and p=0.003, respectively, Table 5).

A correlation analysis was performed for mDISCERN and GQS scores with view ratio, VPI, and number of comments. While there was no significant correlation for the mDISCERN score with view ratio, and number of comments, a weak negative correlation was observed with the VPI (r_s=-0.326, p=0.037). While weak negative correlations were also observed between the GQS score and

Table 2. Descriptive statistics by video type

	Mean±SD	Median	IQR	Min-Max
Duration (sec)	257.17±128.71	246	161-345	78-549
Number of views	1456916.45±4300833.26	23999	8612-399777	404-20939879
Time since upload (day)	1548.07±1700.55	1240	634-1676	150-10225
View ratio	932.88±3005.75	20.7	13.1-264.5	0.7-14746.4
Number of likes	5198.12±22175.42	116.5	43-1750	0-143000
Number of dislikes	1155.69±5062.96	13.5	0-138	0-32000
Like ratio	91.34±8.71	93.8	85.9-100	69.9-100
VPI	753.99±2335.20	19.5	11.2-286.8	0.7-12049.9
NOC	401.95±1768.09	6.5	0-74	0-11292

VPI: video power index, NOC: number of comments, SD: standard deviation, IQR: interquartile range (25^{th}-75^{th} percentile)

Table 3. Descriptive statistics of mDISCERN and GQS scores of the videos

	Mean±SD	Median	IQR	Min-Max
DISCERN	2.29±0.65	2.2	1.8-2.8	0.8-3.8
GQS	2.75±0.67	2.8	2.2-3.2	1.4-4.2

GQS: global quality score, SD: standard deviation, IQR: interquartile range (25^{th}-75^{th} percentile)

Table 4. Comparison between professionals and non-professionals

	Professionals				Non-Professionals				p
	Mean±SD	Median	IQR	Min-Max	Mean±SD	Median	IQR	Min-Max	
DISCERN	2.38±0.61	2.4	1.8-2.9	1.4-3.8	1.50±0.50	1.6	0.8-2	0.8-2.0	**0.017**
GQS	2.84±0.65	2.9	2.4-3.3	1.4-4.2	1.95±0.25	2.0	1.7-2.2	1.6-2.2	**0.010**
View ratio	973.24±3148.33	20.1	13.1-264.5	0.7-14746.4	549.50±1003.88	71.6	6.4-1570.5	1.6-2053.2	0.830
VPI	787.92±2448.35	18.6	11.2-286.8	0.7-12049.9	440.16±794.07	64.9	6.4-1249.2	1.6-1629.2	0.792
NOC	441.26±1856.66	73.5	0.8-7.5	0-11292	28.50±56.33	0.5	0-85	0-113	0.270

GQS: global quality score, VPI: video power index, NOC: number of comments, SD: standard deviation, IQR: interquartile range (25^{th}-75^{th} percentile)

Table 5. Comparison of surgical technique videos and videos that provide information on diseases or surgery

	Surgical Technique				Information about the Disease or Surgery				p
	Mean±SD	Median	IQR	Min-Max	Mean±SD	Median	IQR	Min-Max	
DISCERN	2.17±0.54	2.0	1.8-2.8	1.4-3.0	2.36±0.70	2.4	1.8-3.0	0.8-3.8	0.329
GQS	2.61±0.58	2.6	2.2-3.2	1.4-3.6	2.83±0.73	3.0	2.2-3.4	1.4-4.2	0.310
View ratio	1387.77±3334.60	191.6	70.1-1243.3	15.4-13164.4	680.17±2841.42	16.8	6.0-32.3	0.7-14746.4	**0.001**
VPI	1125.32±2404.70	185.5	53.2-1165.1	14.7-9195.7	561.45±2320.65	13.7	5.6-27.9	0.7-12049.9	**0.001**
NOC	327.87±636.92	46	8-382	0-2363	443.11±2169.41	1	0-21	0-11292	**0.003**

GQS: global quality score, VPI: video power index, NOC: number of comments, SD: standard deviation, IQR: interquartile range (25^{th}-75^{th} percentile)

view ratio (r_s=-0.392, p=0.010), and VPI (r_s=-0.382, p=0.014), there was not a significant correlation between the GQS score and the number of comments (Table 6).

Table 6. Correlation of mDISCERN and GQS scores with view ratio, VPI, and NOC

	View ratio		VPI		NOC	
	r	p	r	p	r	p
DISCERN	-0.295	0.058	-0.326	**0.037**	-0.229	0.145
GQS	-0.392	**0.010**	-0.382	**0.014**	-0.189	0.145

GQS: Global quality score, VPI: Video power index, NOC: Number of comment

DISCUSSION

This study determined that the quality and reliability of labiaplasty videos on YouTube are low. In particular, the quality of videos shared by non-physicians is very low. A statistical comparison could not be made since videos uploaded by patients, commercial entities, and allied health personnel were very few in number. For this reason, academics and physicians were grouped as professionals and others as non-professionals.

Health videos shared on YouTube are generally average or below average. In a systematic evaluation of the quality of health information on YouTube, Osman et al. (10) found that the mean mDISCERN score of videos reviewed was 2.36, while the mean GQS score was 2.68. Similar values were found in this study (mDISCERN: 2.29, GQS: 2.75). In a study evaluating the quality of FGCS videos by Erdoğan (4) found that the videos were of average quality. This shows that the present study is consistent with the broader literature.

Health information videos on YouTube come from various sources, such as doctors, academic institutions, patients, and advertisers. In studies evaluating YouTube videos, there is a remarkable number of videos uploaded by patients. In a study by Lee et al. (11), 37% of videos were shared by patients, while 48% were uploaded by physicians and academics. In the study of Andan et al. (12), 30% of the video uploaders were physicians, while 70% were non-physicians. In the present study, very few videos were uploaded by parties other than physicians and academic institutions (non-professionals: 9.6%). Most women do not prefer talking about private health matters, even with doctors (13). Therefore, not sharing their own experiences with labiaplasty on a video platform like YouTube is understandable. In addition, for liposuction, which has gained popularity in recent years, the vast majority of videos (83.1%) are uploaded by healthcare providers (2,14). Commercial concerns, such as labiaplasty and liposuction, may have pushed physicians to share more on these subjects.

Many studies evaluating the quality of health-related YouTube videos, especially the quality of videos uploaded by non-doctors, have found them to be poor or moderate in quality, and they have been reported to have misleading and harmful content (11,12,15). When mDISCERN scores were compared between doctors and non-physicians in Erdogan's (4) study, no difference was detected, and the video quality was moderate. In the present study, a significant difference was observed when comparing mDISCERN and GQS scores between professional and non-professional uploaders. However, it should not be ignored that the videos in the professional group were of low quality. It has been reported in some studies that videos uploaded by patients and other users are watched and liked more (11,12,15). The time elapsed since a video was uploaded affects its rates of likes and views, therefore, we decided that it would be more appropriate to evaluate VPI and view ratio in this study. These factors were found to be similar in the two groups.

Most women get information about their sexual organs through the media (16,17). In Sharp et al.'s (16) research, 78.6% of participants reported that their first inquiry into labiaplasty occurred through the media. Almost all participants (92.9%) drew attention to the importance of searching for information about labiaplasty in detail before committing to surgery. A Dutch study found that women who used the internet to learn about labiaplasty considered the procedure more acceptable (18). In the present study, when videos about surgical techniques were compared with videos that provide information about the disease, view ratio, VPI, and the number of comments were found significantly higher. The internet can be made a stronger reference point for those considering genital modification surgery, as many women are reluctant to discuss their genital concerns with their healthcare professional (3). That two groups had similar mDISCERN and GQS scores but different view ratio and VPIs might be because patients considering a surgical procedure have more interest in these videos.

In this study, a weak negative correlation was observed between mDISCERN score and VPI. Likewise, between GQS score and view ratio and VPI, a weak negative correlation was observed. This shows that videos of poor

quality attract more interaction than higher-quality videos. Similarly, in studies evaluating information about sleeve gastrectomy and prostate cancer on YouTube, negative correlations were identified (19,20).

The strength of this study is that the videos were reviewed by a five-person commission. In previous studies, they were generally evaluated by two people. Moreover, as far as we know, this is the first study evaluating YouTube videos about labiaplasty.

The primary limitation of the present study is that only English videos were analyzed. Another major limitation was that we were taking snapshots of information on YouTube, which has a dynamic structure in that the contents are constantly updated. A further limitation is that we only scored videos on YouTube; content from other health-related websites was excluded from the study.

CONCLUSION

It was determined that videos on YouTube about labiaplasty have generally poor quality. Most of the videos included in this study were uploaded by physicians, which is remarkable. YouTube is not a reliable information source with up-to-date data about labiaplasty. However, healthcare providers must accept that patients use the internet, particularly the video content provider YouTube, as a source of medical and health information. The American College of Obstetricians and Gynecologists (ACOG), the Royal College of Obstetricians and Gynecologists (RCOG), etc. organizations should provide up-to-date content on YouTube similar to the "Patient" section on their official websites.

Ethics Committee Approval: Since our study was not an experimental study including human or animal subjects, ethics committee approval was not required.

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